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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/811,719	03/19/2001	Katsuaki Abe	1743/179	9475

7590 11/04/2002
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EXAMINER

JOHNSTON, PHILLIP A

ART UNIT	PAPER NUMBER
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2881

DATE MAILED: 11/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/811,719

Applicant(s)

ABE ET AL.

Examiner

Phillip A Johnston

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other: ____

Detailed Action

Specification

1. The disclosure is objected to because of the following informalities: Page 5, line 12, "inspectors" should be "inspector"; page 6, line 17, "faults" should be "fault"; page 7, line 12, "electron microscope which" should be "electron microscope 1 which"; page 7, line 25, "realtime-displayed" should be "real-time displayed"; page 10, line 20, "positions " should be "position"; page 15, line 13, "size 42 of" should be "size 41 of"; page 19, line 15, "without a fail" should be "without fail"; page 22, line 15, "another fault coordinates" should be "another faults coordinates"; and "click" should be "clicks";

2. The disclosure is also objected to due to inconsistent use of the terms "field of view" and "field-of-view"; as well as, the redundant term "field of view field" which tend to confuse rather than clarify procedures.

Appropriate correction is required.

Claims Rejection – 35 U.S.C. 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1-7 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,259,960 to Inokuchi.

Regarding Claim 1, Inokuchi discloses an electron microscope part inspecting system that includes an optical foreign material-inspecting apparatus 1, an optical defect-inspecting apparatus 2, a defect image filing system (DIFS) server 3 for storing information, an EWS (engineering workstation), etc. are connected by a network N. Data loaded in the DIFS server can be sent to various apparatuses connected with the network N as the need arises. See Column 16, line 59-65, and Column 19, line 15-17. When a wafer is inspected for defects, preliminary inspection information about the inspected wafer is read into the review SEM from the DIFS server 3 via the engineering workstation, the preliminary inspection information being obtained by inspections performed by the foreign material-inspecting apparatus 1 and the defect-inspecting apparatus. Then, the review SEM selects desired foreign material or defect and moves the sample stage into a position specified by the preliminary inspection information. See Column 18, line 11-21. Inokuchi teaches that the review SEM can automatically move the selected defects into a review position according to information about the positions

of the defects to be reviewed, the information being contained in the preliminary inspection information. The dimensions of inspected parts taken in the direction of thickness can be automatically calculated. The deviation of the center position of a defect in the review position from the center of the microscope image is measured. The defect can be automatically moved into the center of the microscope image. See Column 6, line 45-68. Inokuchi also describes a defect image filing system (DIFS) that is a computer terminal connected with the network N can be variously searched for preliminary inspection information, defect images, information about defects, information about x-ray analysis, information about tests, and data and process information obtained from other testing devices. The DIFS can display the contents or the results of summations in the form of table, graph, image, wafer map, and so on. Also, this filing system is able to find the correlations among various kinds of information, perform statistical processing, and image processing. See Column 19, line 25-36. In addition a mode selecting means C31 has a function of displaying a menu to permit the user to determine whether information about a wafer to be reviewed is entered in the fully automated input mode. The SEM controller operates according to the selected wafer information input mode. If the fully automated input mode is not selected, the controller displays a menu for promoting the user to manually enter wafer information. See Column 38, line 34-41. It is implied herein, that since the Inokuchi invention has a means of either manually or automatically moving the field of view of the electron microscope, a cursor or keyboard provides a "pointing device switch which moves the field of view of the electron microscope to a position which is pointed to by a

pointer on said display, and a function of changing the display as said field of view moves", as recited in Claim 1.

Regarding Claims 2 and 3, Inokuchi as applied to Claim 1 above, discloses an electron microscope part inspecting system that also includes an automatic field of view adjustment-commanding means, which commands an automatic adjustment of the field of view, an automatic field of view-adjusting means (C14) causes the microscope image magnification-setting means to set the magnification of the microscope image to a preset appropriate value according to the size of the defect on the microscope image. This means C14 processes the accepted image and modifies the magnification so that the obtained defect comes within the field of view. Also, this adjustment means C14 makes automatic brightness adjustment, automatic contrast adjustment, automatic focusing adjustment, and automatic centering. This function of the automatic field of view adjusting means C14 makes it unnecessary for the operator to manually adjust the magnification while watching the viewing screen or to adjust the brightness or focusing.

See Column 10, line 48-55

Regarding Claim 4, Inokuchi as applied to Claim 1-3 above, discloses an electron microscope part inspecting system wherein, in process flow step 167, some foreign materials spaced from each other most remotely are selected. The field of view is moved into the point where the foreign material exists. The coordinates of the center of each foreign material are found. The misalignment is corrected to minimize the positional deviation. See Column 63, line 28-33.

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Regarding Claim 5, Inokuchi as applied to Claim 1-4 above, discloses an electron microscope part inspecting system that utilizes a shape monitored, image similar, image seeking means G32, which searches the database for images similar to the SEM image (shape-monitored image) of a shape-monitored portion and displays the discovered images. Within this function, the image database of the DIFS server 3 is searched for shape image data having the same magnification and center coordinates lying in a tolerable range (generally, where the stage error is in a tolerable range), using the magnification of the image and the coordinates of the center of the image as keywords. The results of the search are entered in a list S that is an array of candidate data items. If the set S contains members or elements, the following operations are executed. If no members are present, nothing is searched for and thus the search for similar images is ended. See Column 51, line 33-48.

Regarding Claim 6, Inokuchi as applied to Claim 1-5 above, discloses an electron microscope part inspecting system that has a an automatic centering means (C11) which includes a defect center position deviation amount-measuring means and a defect-moving means for moving the defect into the center position. The defect center position deviation amount-measuring means measures the deviation of the center of the defect from the center of the microscope image after the defect has been moved into the review position. The defect-moving means moves the defect an amount equal to the measured deviation so that the defect is brought into the center of the microscope image. See Column 10, line 35-43.


Regarding Claim 7, Inokuchi as applied to Claim 1-6 above, discloses an electron microscope part inspecting system with a function that adjusts the SEM when the defect image deviates from the field of view. For example, X- and Y-coordinates of the defect on the preliminary inspection equipment (1, 2) may deviate from the X- and Y-coordinates on the review SEM, because of the detection accuracy of the preliminary inspection equipment (1, 2), the accuracy of the position of the sample stage, or the accuracy of the position of the stage of the review SEM. When this occurs the automatic centering means C11 brings the defect into the screen center by adjusting at least one of automatic brightness adjustment, automatic contrast adjustment, and automatic focusing adjustment of the SEM. See Column 32, line 57-66, and Column 33, line 1-3.

Conclusion

5. Any inquiry concerning this communication or earlier communications should be directed to Phillip Johnston whose telephone number is (703) 305-7022. The examiner can normally be reached on Monday-Friday from 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor John Lee can be reached at (703) 308-4116. The fax phone numbers are (703) 308-2864 and (703) 308-7721.

PJ
October 21, 2002


JOHN R. LEE
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